

Notice of Allowability

Application No.

10/713,204

Examiner

Henry S. Hu

Applicant(s)

TURRI ET AL.

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Pre-Amendment of November 17, 2003.
2. ☒ The allowed claim(s) is/are 12-29.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 3 pages
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. It is noted that this application is a **DIV of 10/094,807, now US Patent No. 6,683,128**
- B2.** This Office Action is in response to the Pre-Amendment filed on November 17, 2003.
Claims 1-11 were canceled, Claims 12, 14-17 and 19 were amended, and new Claims 20-29 were added. To be more specific, Claim 12 was amended to be in independent form as well as to follow the same limitations used for the allowed Claims 1-11, while Claims 14-17 and 19 were amended on claim dependency or with proper language accordingly. The Applicants allege that new claims have the support and no new matter is added on page 7 of Remarks.
Claims 12-29 are now pending. An action follows.

Allowable Subject Matter

2. Claims 12-29 are allowed.
3. The following is an examiner's statement of reasons for allowance: The above claims 12-29 are allowed over the closest references:
4. *The limitation of amended parent Claim 12 of present invention relates to a process for obtaining additives for hydrogenated resins comprising (1) reacting the following components:*
(a) bifunctional perfluoropolyethers having a -COOR (R is H, or C₁₋₁₀ alkyl) end group and

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*optionally admixing with monofunctional perfluoropolyethers having –COOR end group, (b) mono-, bi-, and poly-functional **hydrogenated monomers having aminic group**, and (c) **polyolefins having functional group from maleic anhydride**. Reacting the component (a) in a first step with (b) or with a mixture of (b) having different functionality, until disappearance of the –COOR end group of component (a), and in a second step reacting the product with the functionalized polyolefin (c). See other limitations of dependent **Claims 13-29**.*

5. In view of the Applicants' amendment, the amended parent **Claim 12** of present invention relates to a process for obtaining additives useful for hydrogenated resins by reacting of three components specifically as **(a) bifunctional perfluoropolyethers having a –COOR end group and optionally admixing with monofunctional analogue, (b) mono-, bi-, and poly-functional hydrogenated monomers having aminic group, and (c) polyolefins having unit of maleic anhydride**. It is noted that through Applicants' pre-amendment, Claim 12 was amended to be independent and to follow the same limitations used for the allowed Claims 1-11, Claims 14-17 and 19 were amended on claim dependency or with proper language accordingly, while new Claims 20-29 were added. It is also noted that this application is a **DIV of 10/094,807**, now US Patent No. 6,683,128 B2 issued on January 27, 2004.

With respect to **103 rejection** by Mauro et al. (US 4,278,776) in view of Liss et al. (US 5,789,491) and Suzuki et al. (JP 0311544) as discussed in the allowed parent case, the primary reference **Mauro** only discloses that a process to make vulcanizable fluoroelastomer-based mixes to be useful as **a processing aid** comprising at least one fluorinated amide prepared by

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condensation of bi-functional amines with polyoxyperfluoroalkandioic acids in admixture of a certain quantity of the corresponding monocarboxylic acid containing inactive terminal group of the type of $-\text{OCF}_3$ or $-\text{OCF}_2\text{Cl}$.

6. In a close examination, the above Mauro's polyamide used as additives is reading on the claimed components (a) and (b). However, the Mauro reference is silent about **including the claimed component (c) such as polyolefin having functional group of maleic acid**. The secondary reference Liss only discloses that **fluorinated imides can be added to thermoplastic polymer compositions for coating on fibers, fabrics, nonwovens, films and molded articles** with the advantage to **improve repellency due to low surface tension**. The other secondary reference Suzuki only discloses that a copolymer is made by **grafting co-polymerization of polyolefin such as polyethylene and polypropylene with maleic anhydride** with advantage as such a graft copolymer, when admixing with a foaming agent, becomes **useful as an automobile interior part, a heat insulation and a cushioning medium for sport goods due to a high expanding ratio and a good adhesiveness**.

The key issue is that **the structure of both Liss and Suzuki does not contemplate the presence of a perfluorinated polyoxyalkylene chain, which is required in Mauro**. As pointed out by the Applicants, the compositions relating to Mauro are incompatible with hydrogenated resins. Additionally, Mauro, Liss and Suzuki, when alone, fail to teach every aspect of the claimed invention. All three references do not teach using a claimed hydrogenated

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polyolefin chain. Therefore, **the motivation** to combine Mauro, Liss and Suzuki in order to teach the limitations of present invention **is lacking**.

7. In a close examination of the search report for this Application's priority document MI2001A-000554 which is now **EP 1,241,227 A1**, the examiner confirms that **US 4,278,776 A to Mauro et al.** (cited as Y), **EP 616,013 A to Nishida et al.** (cited as Y) and **WO 99-23149 to Benjamin et al.** (cited as Y) all fail to teach or fairly suggest the particular limitation of **"combination of "three" components (a), (b) and (c)"** to make additives for hydrogenated resins.

In order to **show the critical combination of three components (a), (b) and (c)**, the present invention has shown in examples along with some comparative examples for unexpected results in additives for hydrogenated resins (see pages 23-43 for **examples 1-15** along with its comparative control examples, and **Tables 1-5**). Therefore, the above references, in combination or alone, fails to teach or fairly suggest the limitation of present invention.

8. After further examination and search, the examiner found the following prior art did not teach the claimed limitation: **US Patent No. 3,876,617 to Caporiccio et al.** only discloses the preparation of a elastomeric polymer comprising a macromolecular chain **polyamide groups by condensation of polyoxaperfluoroalkandioic acids and diamines** (abstract, line 1-9). Therefore, Caporiccio fails to teach or fairly suggest reacting the above polyamide further

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with polyolefins having maleic anhydride unit as well as its use for hydrogenated resins as additives.

US Patent No. 6,380,336 to Soanne et al. discloses a copolymer capable of forming a water- and oil-repellent agent that enables binding to textiles and other materials; the **copolymer comprises units of cyclic acid anhydride such as maleic anhydride** (abstract, line 1-9; column 3, line 45-55). However, Soanne et al. **fail to teach using amide linkage on the fluorinated polymeric backbone**, Soanne et al. **also fail to teach using additional component such as neutral perfluoropolyether oils.**

9. The key issue, regarding a process to make **additives useful for hydrogenated resins** by reacting of **three components** from (a) bifunctional perfluoropolyether having –COOR group, (b) hydrogenated monomer having aminic group, and (c) polyolefins having maleic anhydride unit, cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.

10. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, the independent and amended Claim 12 is allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending Claims 13-29 are passed to issue.

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11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

12. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Henry S. Hu whose telephone number is (571) 272-1103. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306 for all regular communications. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Henry S. Hu



Patent Examiner, Art Unit 1713, USPTO

April 18, 2005



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